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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,657	05/19/2005	Povl Kaas	P70574US0	6167

136 7590 09/20/2007

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EXAMINER	
ALLEN, CAMERON J	
ART UNIT	PAPER NUMBER
1743	

MAIL DATE	DELIVERY MODE
09/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/535,657	KAAS, POVL	
	Examiner	Art Unit	
	Cameron J. Allen	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☒ Claim(s) *7,8,10 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/01/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 7,8,10, and 16, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. The examiner will interpret these claims with the broadest ranges listed.

See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieler US 4,456,512 in view of Minoshima Masahiko JP 09-192659, and further in view of Brocheton et al US 6,048,812.

Regarding Claim 1, Bieler teaches an apparatus for purifying contaminated water by photochemical oxidation (Column 4 line 55-60), wherein at least a sub-flow of water is directed through a flow channel wherein the water is irradiated with UV electromagnetic radiation from an array of UV lamp assemblies(Column 3 line 3-5 and 55-56)(Column 4 line 55-60), but does not teach that each of said UV lamp assemblies include a high-pressure UV halogen lamp with the flow direction in the channel and that the lamp assemblies include a tubular UV absorber around each lamp. Masahiko does teach a high-pressure UV halogen lamp. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bieler with Minoshima, since it is know that high-pressure halogen lamps are more effective at treating the water. (Abstract) Brocheton teaches a UV absorber. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bieler in view of Minoshima with Brocheton since it would yield the expected result of absorbing UV radiation.

Regarding claim 2, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 1, wherein the absorber is made of an infrared radiation absorbing material.(Brocheton Table in column 1)

Regarding claim 3, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 1, wherein the absorber is made of or coated by a radiation protective material shielding the wave lengths that may decompose or prevent the creation of OH and atomic oxygen O3P. (Brocheton Table in column 1) *The examiner interprets these properties to be inherent to TiO2 and SiO2.*

Regarding claim 4, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 1, wherein the lamp assembly includes means for supplying dispersion chemical to the water upstream the UV high-pressure lamp. (Minoshima 0014)

Regarding claim 5, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 4, wherein at least one oxidation chemical is dispersed in the water. (Minoshima 0014)

Regarding claim 6, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 5, wherein said oxidation chemical is oxygen, hydrogen peroxide, ozone, perchloric acetic acid or any combination thereof. (Minoshima 0014)

Regarding claim 7, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 1, but does not teach wherein the UV high-pressure lamp radiates intensive UV electromagnetic radiation with a wave length in the

range of 150 nm to 260 nm, preferably in the range of 160 nm to 220 nm, and most preferably in the range of 192 nm to 205 nm. It would have been obvious to one of ordinary skill in the art at the time of the invention use the above range, since it has been held that where general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 8, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 7, but does not teach wherein the UV high-pressure lamp radiates the water with at least 25 mJ/cm2, preferably at least 120 mJ/cm2. It would have been obvious to one of ordinary skill in the art at the time of the invention use the above range, since it has been held that where general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 9, Bieler in view of Minoshima in further view of Brocheton teaches an apparatus according to claim 1, wherein an array of lamp assemblies are parallel in arranged in a cassette module, which is insert able into the flow channel. (Bieler Column 9 line 5-10)

Regarding claim 10, Bieler teaches a method of purifying contaminated water by photochemical oxidation (Column 4 line 55-60), whereby at least a sub-flow of water is directed through a flow channel wherein the water is irradiated with UV electromagnetic radiation from at least one UV lamp assembly, characterized in that the water flow is radiated with UV radiation (Column 3 line 3-5 and 55-56)(Column 4 line 55-60) but does not teach UV halogen high-pressure lamp assembly, which is energy intensive wave

lengths in the range of 150 nm to 260 nm, preferably in the range of 160 nm to 220 nm, and most preferably in the range of 192 nm to 205 nm and that the at least one lamp assembly includes a tubular UV absorber around the lamp shielding the water flow through the lamp assembly. Masahiko does teach a high-pressure UV halogen lamp. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bieler with Minoshima, since it is know that high-pressure halogen lamps are more effective at treating the water. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the above range, since it has been held that where general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (Abstract) Brocheton teaches a UV absorber. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bieler in view of Minoshima with Brocheton since it would yield the expected result of absorbing UV radiation.

Regarding claim 11, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim I0, whereby the absorber is made of an infrared radiation absorbing material. (Bieler Column 9 line 41)

Regarding claim 12, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim I0, whereby the absorber is made of or coated by a radiation protective material preventing decomposing of OH" and preventing the creation of atomic oxygen O3P. (Brocheton Table in column 1)

Regarding claim 13, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim I0, whereby dispersion chemical is supplied into

the water flow upstream the UV high-pressure lamp, preferably in the inlet opening of the tubular absorber. (Minoshima figure 1 #13)

Regarding claim 14, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim 13, whereby at least one oxidation chemical is dispersed in the water. (Minoshima 0014)

Regarding claim 15, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim 14, whereby the oxidation chemical is oxygen, hydrogen peroxide, ozone, perchloric acetic acid, or any combination thereof. It would have been obvious to one of ordinary skill in the art at the time of the invention use the above range, since it has been held that where general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 16, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim 10, but does not teach whereby the UV high-pressure lamp radiates the water with at least 25 mJ/cm2, preferably at least 120 mJ/cm2 . It would have been obvious to one of ordinary skill in the art at the time of the invention use the above range, since it has been held that where general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 17, Bieler in view of Minoshima in further view of Brocheton teaches a method according to claim I0, whereby an array of lamp assemblies are parallel and arranged in the flow channel in a cassette module, which is inserted into the

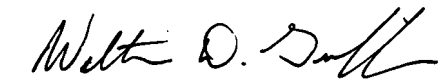
flow channel. (Bieler Column 9 line 5-10)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cameron J. Allen whose telephone number is 571-270-3164. The examiner can normally be reached on M-Th 8:30-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJA



WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER